

III. REMARKS

1. Claims 1, 2, 6, 16, 17 and 23 are amended.

2. Claims 4 and 5 are rejected under 35 U.S.C. §112 second paragraph. Claim 4 relates to determining a position of a three-dimensional obstacle while claim 5 relates to recognizing the movement of a three-dimensional obstacle. Support for this claimed subject matter can be found for example, beginning on page 7, line 29 to page 8, line 11 and page 8, lines 16-29. This paragraph discloses a three-dimensional network, where for example, the position of an artificial obstacle can be determined. (page 8, lines 1-5).

It is also submitted that the specification and drawings disclose more than two infrared transceivers. As shown in FIG. 7, the IR transceivers 73a and 73b are represented by the black rectangles on the body part 71 and cover part 72, respectively. The lines from 73a and 73b should refer to the black rectangles on each of the body part 71 and cover part 72, respectively. Thus, more than two IR transceivers are referenced, shown and described.

The IR transceivers form the three-dimensional network above the keyboard. (page 7, lines 35-36). Position recognition is enabled, which allows the position/shape to be computed three-dimensionally. (page 8, lines 3-7). The network can determine the position of a moving obstacle. (page 8, lines 17-19). Movement or stopping of the movement of an artificial obstacle may be used. (page 8, lines 22-24). The arrangement can recognize artificial obstacles and "follow their movements." (page 8, lines 27-29).

Thus, it is respectfully submitted that there is sufficient specification language to support the claimed subject matter recited in claims 4 and 5.

Claims 2, 16 and 17 are amended to replace "BP" with "MLP" as discussed with the Examiner in May 2004.

3. Claims 1, 6, 7, 15, 19, 23 and 24 are not anticipated by Natoli (U.S. Patent No. 6,388,657) under 35 U.S.C. §102(e).

Claim 1 is amended to recite that radiation is emitted from at two or more IR transmitters. Natoli discloses only one IR detector (Col. 18, lines 1-6 and FIG. 48). Only one input signal is possible to the neural network and only an ON-OFF detector can be created. The system of Natoli does not create a virtual keyboard.

In Applicant's invention, by using two or more IR transceivers, which can all be active at the same time, it is possible to create a virtual keyboard. This is not disclosed or suggested by Natoli. Thus, claims 1, 6 and 23 are not anticipated by Natoli. Claims 7, 15, 19 and 24 should be allowable at least in view of their respective dependencies.

4. Claims 2, 16 and 17 are not unpatentable over Natoli in view of Haikonen (FI 103305) under 35 U.S.C. §103(a). Claims 2, 16 and 17 should be allowable at least by reason of their respective dependencies. Applicant also requests a copy of the English translation of Haikonen (FI 103305) used by the Examiner.

5. Claims 20-22 are not anticipated by Haikonen.

Claim 20 is amended to recite that "all" neurons of a hidden layer receive input signals. This is not disclosed or suggested

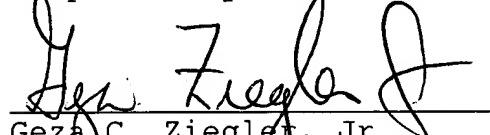
by Haikonen. Haikonen only discloses that "only one input signal in the associative group of neurons is active at a time." (page 4, lines 21-28). It is not possible to activate all inputs at the same time in the neural network of Haikonen. In Applicant's invention, all IR inputs are active at the same time, which means that all neural inputs are active. All available input information (from all IR transceivers) is used when making a decision about which key has been selected. Since Applicant's invention utilizes signals from all IR transceivers, all neurons of the hidden layer also receive an input signal. In Haikonen, only part of the neuron inputs are allowed to be active and Haikonen neglects some of the IR inputs, which, if the same were done in Applicant's invention, would not provide enough information to create a virtual keyboard. Thus, Applicant's invention according to claim 20 is distinctly different from Haikonen. Claims 21-23 should be allowable in view of their respective dependencies.

6. Claims 8-14 are not unpatentable over Natoli under 35 U.S.C. §103(a). Claims 8-14 should be allowable at least by reason of their respective dependencies.

For all of the foregoing reasons, it is respectfully submitted that all of the claims now present in the application are clearly novel and patentable over the prior art of record, and are in proper form for allowance. Accordingly, favorable reconsideration and allowance is respectfully requested. Should any unresolved issues remain, the Examiner is invited to call Applicants' attorney at the telephone number indicated below.

A check in the amount of \$1020 is enclosed for a three-month extension of time. The Commissioner is hereby authorized to charge payment for any fees associated with this communication or credit any over payment to Deposit Account No. 16-1350.

Respectfully submitted,


Geza C. Ziegler, Jr.
Reg. No. 44,004

5 JAN 2005
Date

Perman & Green, LLP
425 Post Road
Fairfield, CT 06824
(203) 259-1800 Ext. 134
Customer No.: 2512

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